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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,684	08/20/2001	William Chun	06816-073003	7123

7590 10/09/2003

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EXAMINER

MUSSER, BARBARA J

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 10/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/933,684

Applicant(s)

CHUN ET AL.

Examiner

Barbara J. Musser

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 1 and 2 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 3-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1 and 2, drawn to a sprayer device, classified in class 118, subclass 300.
 - II. Claims 4-13, drawn to a method of forming a membrane electrode assembly, classified in class 156, subclass 313.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because none of the combination claims require the specifics of the subcombination. The subcombination has separate utility such as a sprayer for adhesive or other coating compositions.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Scott Harris on 9/10/03 a provisional election was made without traverse to prosecute the invention of group II, claims 3-13. Affirmation of this election must be made by applicant in replying to this Office action.

Claims 1 and 2 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 6, 7, 12, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what is meant by a NAFION solution, as the word solution implies a mixture of some sort but no such mixture is claimed. It is unclear what is meant by PTFE-30 as PTFE is a known polymer, but it is unclear what the -30 means.

Abbreviations should not be used in claims as they can have multiple meanings which are dependent on the specific field. It is unclear what is meant by the PTFE-30 being diluted to 11% in solids as it is unclear if this means the PTFE-30 is diluted to 11% before addition to the mixture or after, and what it is diluted with.

Claims 6, 7, 12, and 13 contain the trademark/trade name NAFION and possibly PTFE-30. Where a trademark or trade name is used in a claim as a limitation to identify

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or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade names are used to identify/describe a perfluorovinylether sulfonic acid and a polytetrafluoroethylene suspension and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 3, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Harada(U.S Patent 5,399,184).

Harada discloses forming a membrane electrode assembly by depositing a catalyst directly on a membrane.(Col. 7, ll. 67-69) The membrane is then stacked with conventional carbon sheets to form a fuel cell.(Col. 9, ll. 8-10) They are bonded via hot pressing.(Col. 10, ll. 22-31) The electrodes are formed on both surfaces of the membrane.(Col. 3, ll. 61-64)

11. Claim 3 is rejected under 35 U.S.C. 102(e) as being anticipated by Debe et al.(U.S. Patent 5,910,378).

Debe et al. discloses forming a membrane electrode assembly by depositing a catalyst directly on both sides of a membrane and applying a support.(Col. 1, ll. 39-48; Col. 18, ll. 55-560) The layers the then laminated together.(Col. 18, ll. 65-67)

12. Claims 3, 8, and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Cisar et al.(U.S Patent 6,054,228)

Cisar et al. discloses forming a membrane electrode assembly by depositing a catalyst directly on a membrane to form thin film electrodes and applying a carbon paper support.(Col. 7, ll. 42-43, 53-59; Col. 8, ll. 22-25) While the reference does not explicitly state the carbon paper is bonded to the membrane, one in the art reading the reference as a whole would see that the support was hot pressed to the membrane(Col.

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7, ll. 54) and that such hot pressing is intended to bond the layers together. It is noted that the effective date of this reference is considered to be September 10, 1997.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time the invention was made to bond the carbon paper support to the membrane electrode assembly since it is well-known in the fuel cell art to bond the layers intimately together as otherwise the support will not provide support for the entire catalyst layer and since Cisar et al. suggests all the layers are bonded together in some fashion.(Col. 8, ll. 40-44)

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 4, 5, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Debe et al. as applied to claim 3 above, and further in view of Grot(U.S Patent 5,547,911).

The references cited above do not disclose how the catalyst ink is applied to the membrane. Grot discloses catalysts can be applied in a variety of ways including pouring and spraying the ink on the membrane.(Col. 6, ll. 65- Col. 7, ll. 1) It would have been obvious to one of ordinary skill in the art at the time the invention was made to pour or spray the catalyst ink onto the membrane since Debe et al. is silent as to the

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method of application and since Grot discloses these are well-known methods of applying catalyst to membranes.

15. Claims 6, 7, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Debe et al. and Grot as applied to claims 4, 5, 10, and 11 above, and further in view of Narayanam et al.(U.S. Patent 5,945,231).

The references cited above do not disclose the catalyst ink composition as having 7-10% catalyst, 60-70% NAFION solution, and 20-30% PTFE-30 diluted to 11% solids. Grot discloses ink compositions are well-known and discloses a conventional one, with disclosing all the specific percentages.(Col. 4, ll. 48-49) Narayanam et al. discloses a catalyst ink which is used in making fuel cells wherein the ink contains 150 mg catalyst, 60-70% NAFION solution, and 15-20% PTFE-30 diluted to 11% solids.(Col. 4, ll. 1-5) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the catalyst ink composition of Narayanam et al. since Grot discloses any conventional ink composition may be used and since the ink of Narayanam et al. appears to be conventional.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Barbara J. Musser** whose telephone number is **(703)-305-1352**. The examiner can normally be reached on Monday-Thursday; alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on 703-308-2058. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

BJM

BJM

Jeff H. Aftergut
JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300